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September 15, 2009

VIA ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
The Portals
445 - 12th Street, SW
Washington, DC 20554

Re: Notice of *Ex Parte* Presentation, GN Docket 09-51

Dear Ms. Dortch:

On September 14, 2009, Geoff Burke and David Russell of Calix, Donny Smith of Jaguar Communications, and I met with Julius Knapp, Walter Johnston, Kevin King, B.J. Neal, Stagg Newman and Joseph Soban of the Commission to discuss the National Broadband Plan inquiry and the current status and cost of Fiber to the Premises (FTTP) deployments in the United States and specifically in rural areas. The attached presentation, used by Calix and Jaguar in the meeting, offered the following conclusions:

- Because of its performance capabilities, incomparable scalability, and "future-proof" characteristics, FTTP has emerged as the "preferred" technology for residential and business services in rural markets in the United States with hundreds of providers deploying the technology.

- In rural markets, FTTP can be cost effective because of the high-penetration rates achieved in deployments. This is especially the case when access infrastructure is viewed as a generational investment and by the total cost of ownership.

- When viewed by total cost of ownership, wireless access infrastructure is surprisingly costly.

Sincerely,

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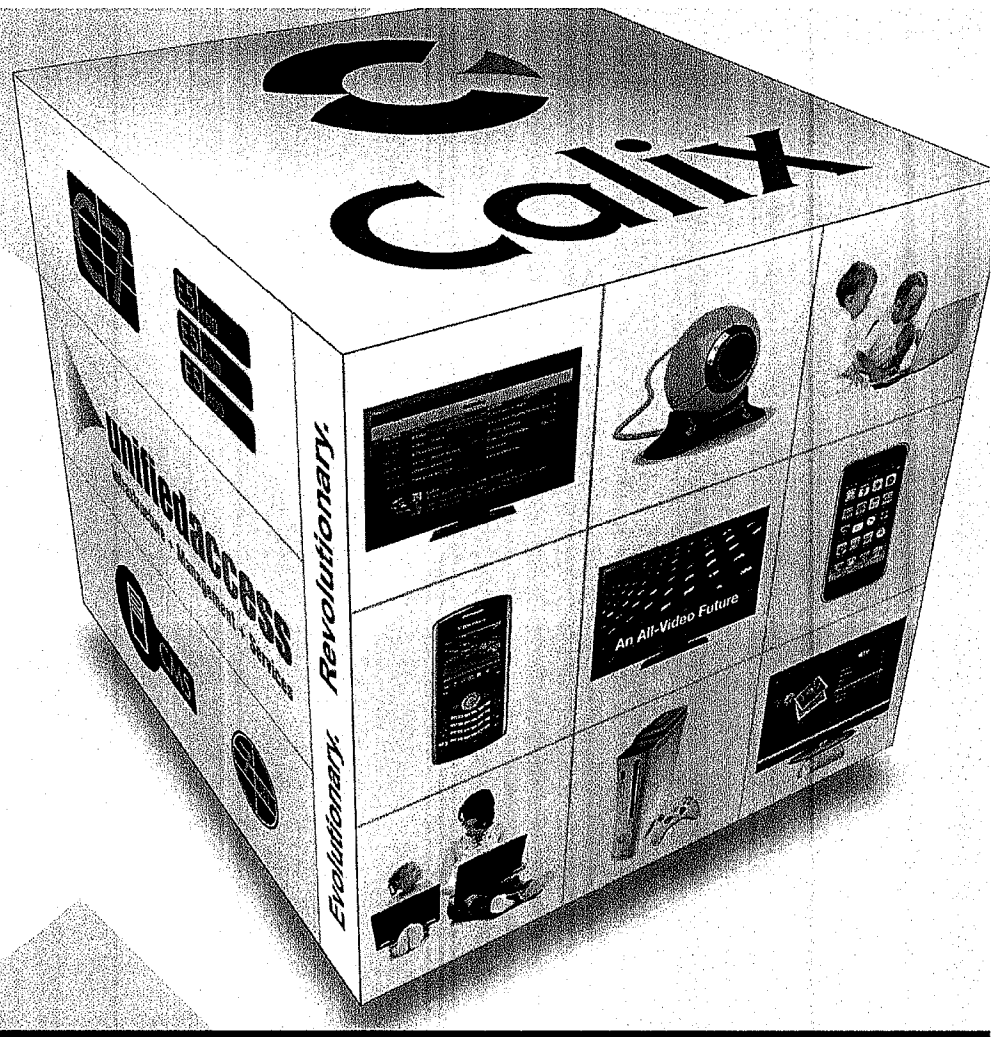
Attachment: FCC Briefing: Fiber Access in Rural America

cc: Julius Knapp
Walter Johnston
Kevin King
B.J. Neal
Stagg Newman
Joseph Soban

NATIONAL BROADBAND PLAN



FCC Briefing | Fiber Access in Rural America

FCC Briefing Agenda

Monday, September 14th

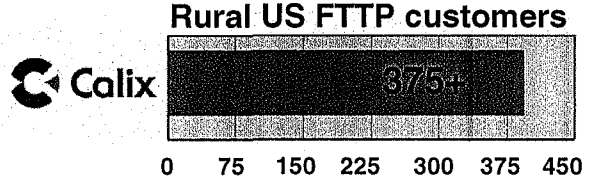
- Introductions
- Drivers of Access Bandwidth
- Update: Fiber Access in Rural America
- Case Studies
  - *EATEL*
  - *Federated Telephone*
  - *Jaguar Communications*

Who is Calix?

- The **LEADER** in rural access infrastructure
  - ***40%*** *of US service providers rely on Calix access platforms for broadband service delivery*

Broadband technologies/services deployed by Calix customers

- Technologies
  - *DSL, PON, gigabit Ethernet, 10 gigabit Ethernet, SONET*
- Services
  - *Data (768Kbps → 1Gbps), IPTV, RF video overlay, VOIP, distance learning, telemedicine*



What is Calix seeing in the US rural markets?

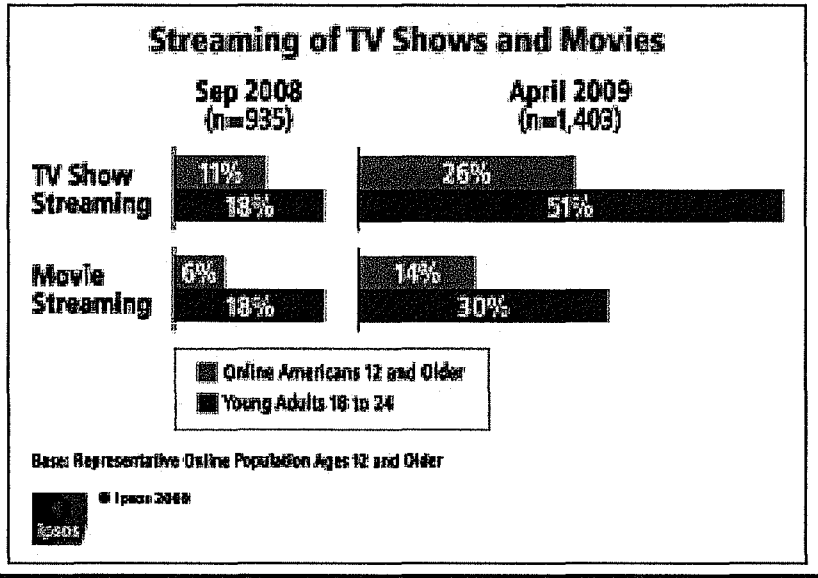
- Fiber to the Premises (FTTP) has emerged as the "**PREFERRED**" technology for business and residential services
  - ***Economics:*** *Increasingly attractive*
  - ***Deployments:*** *US has 600+ service providers deploying FTTP in rural/urban markets*
  - ***Subscriber adoption rates:*** *Strong (50%+ in most FTTP deployments)*
  - ***FTTP services enabled:*** *Residential (1 Mbps to 100 Mbps), Business (T1s to gigabit Ethernet)*
  - ***Hot FTTP applications:*** *Mobile backhaul, IPTV, cable RFOG, business Ethernet*

Where is the US rural market going?

- The rapid emergence of an **ALL VIDEO** world
  - *Broadband driven: textual → graphical → video*
  - *Video = Rich, interactive content shared across devices*
- Average annual US bandwidth increase = **70%**
  - *Today=5 Mbps → 5 yrs=100 Mbps → 10 yrs=1 Gbps*

Ubiquitous Video → Entertainment, Education, Communication

Last 6 months → Video streaming doubled



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Video Changes Bandwidth Rules…

Internet video is the key driver of the new game

- Bandwidth requirements range from burdensome to instantaneous

	Size	Wireless 3 Mbps	ADSL2+ 10 Mbps	Current FTTH 50 Mbps	Future FTTH 1 Gbps
 Photo – 7 Megapixel	4 Mb	48 s	3.6 s	.7 s	.04 s
 Music – Download	4 Mb	48 s	3.6 s	.7 s	.04 s
 Podcast – News	114 Mb	20 m 20 s	1 m 31 s	18 s	.9 s
 TV Show – 40 min	200 Mb	36 m	3 m	35 s	1.8 s
 Movie – iTunes	1.5 Gb	4h 38m	21 m	5 m	15 s
Movie – Best Quality	2.5 Gb	7h 42m	36 m	8 m	24 s

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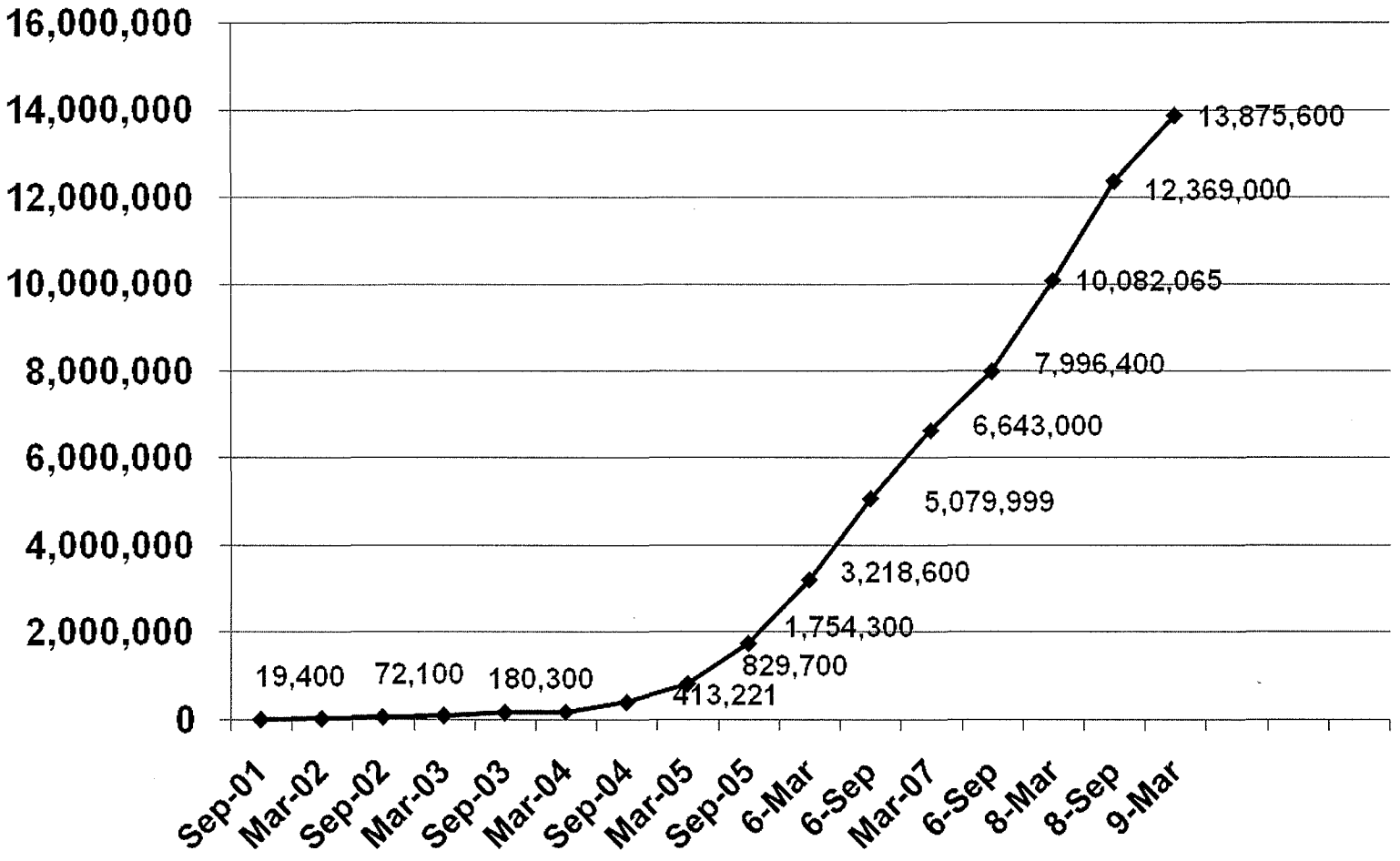
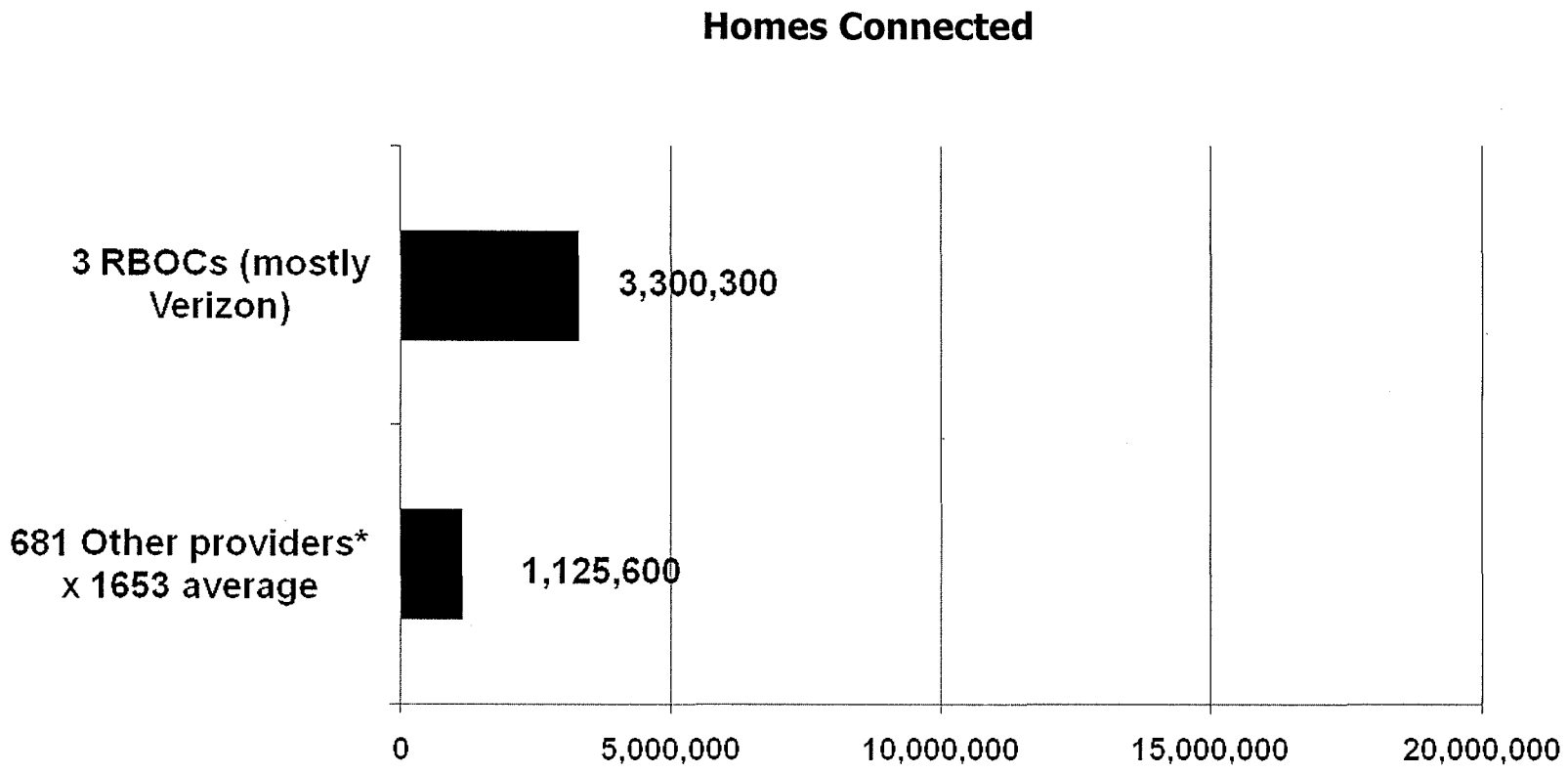
Fiber Access Homes Marketed

Cumulative – North America



RVALLC 2009

Rural Carrier FTTP = High Take Rates

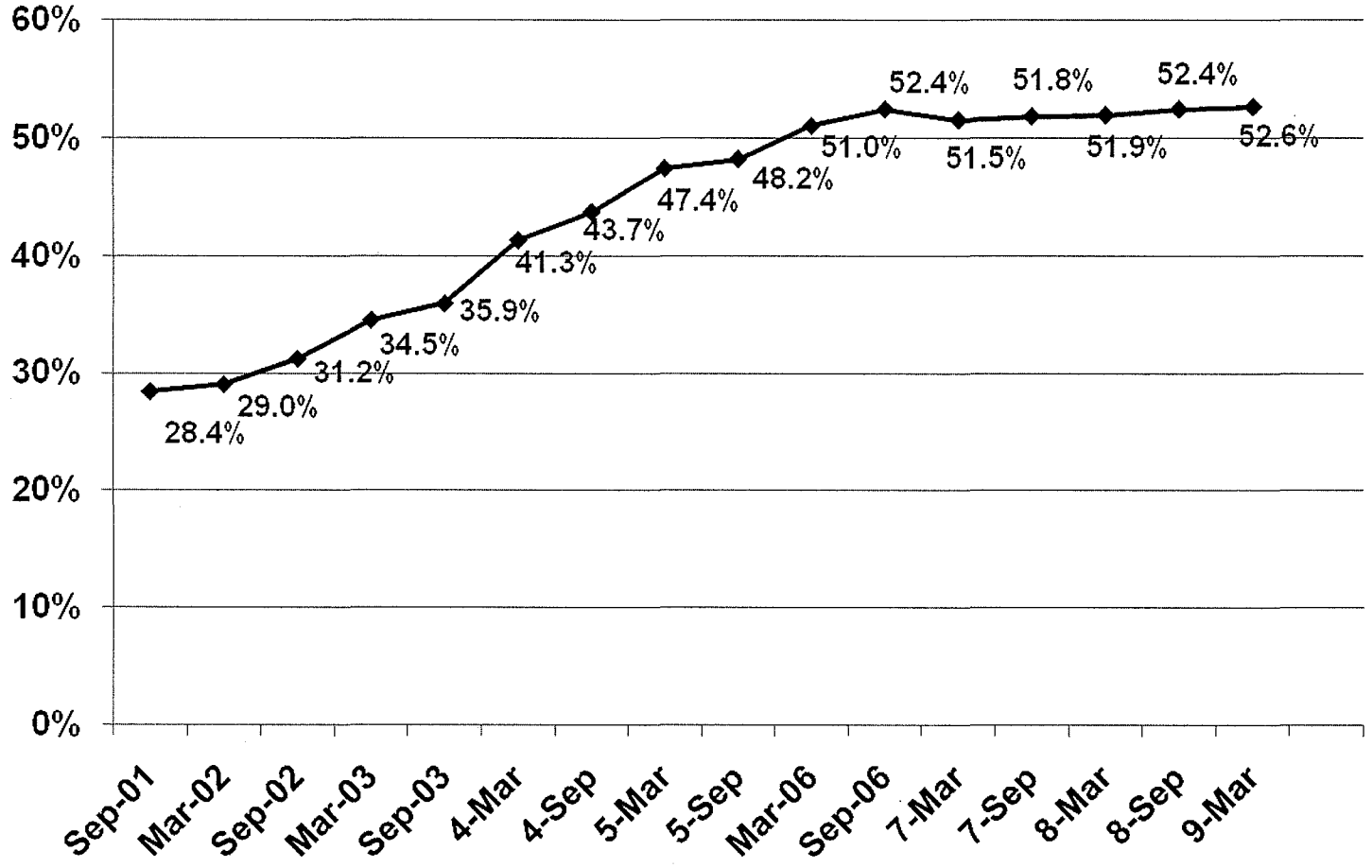


*** Includes CLECs that are divisions of ILECs**

RVALLC 2009

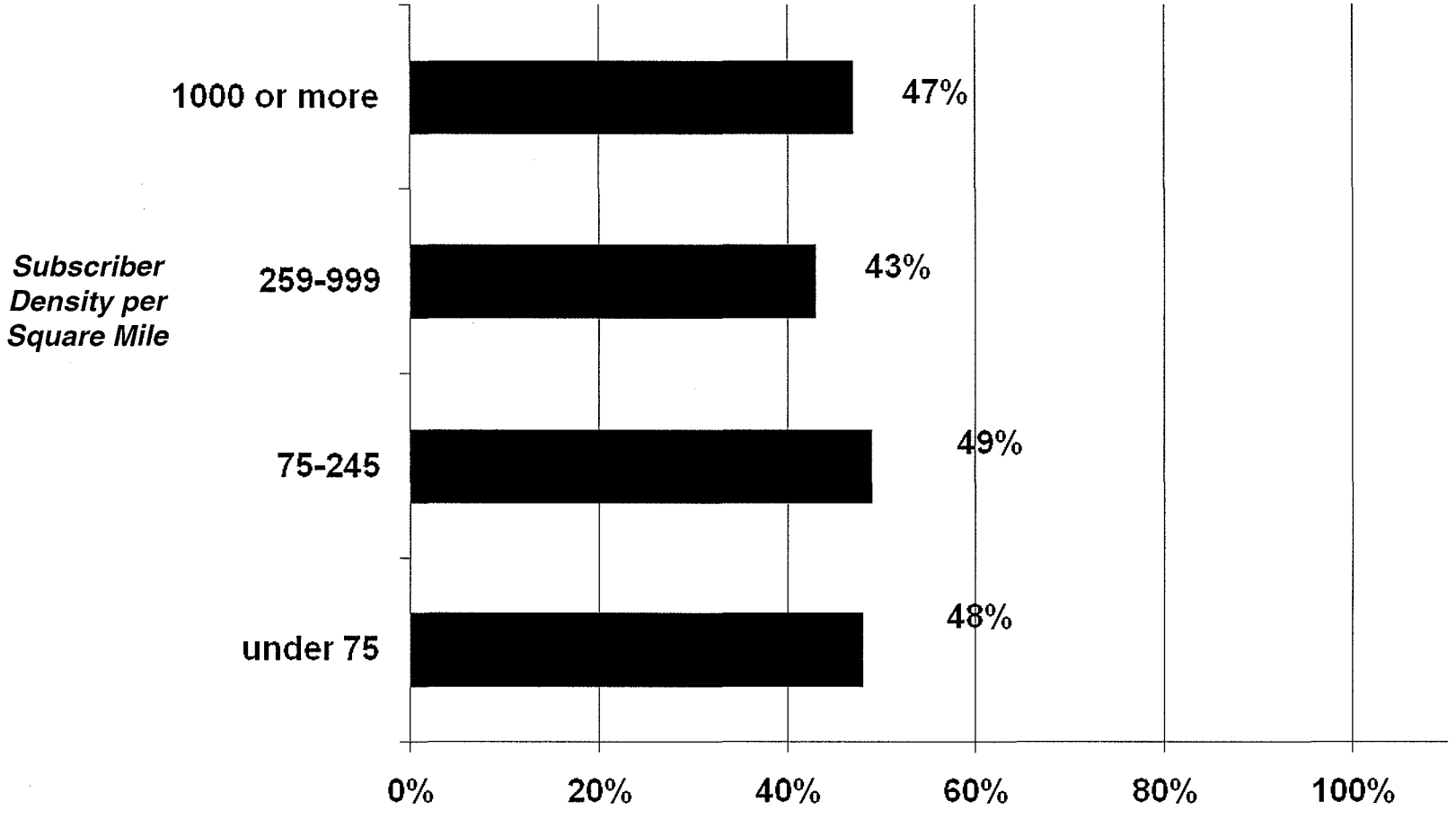
Fiber Access Take Rate – Non-RBOC

Cumulative – North America By Year



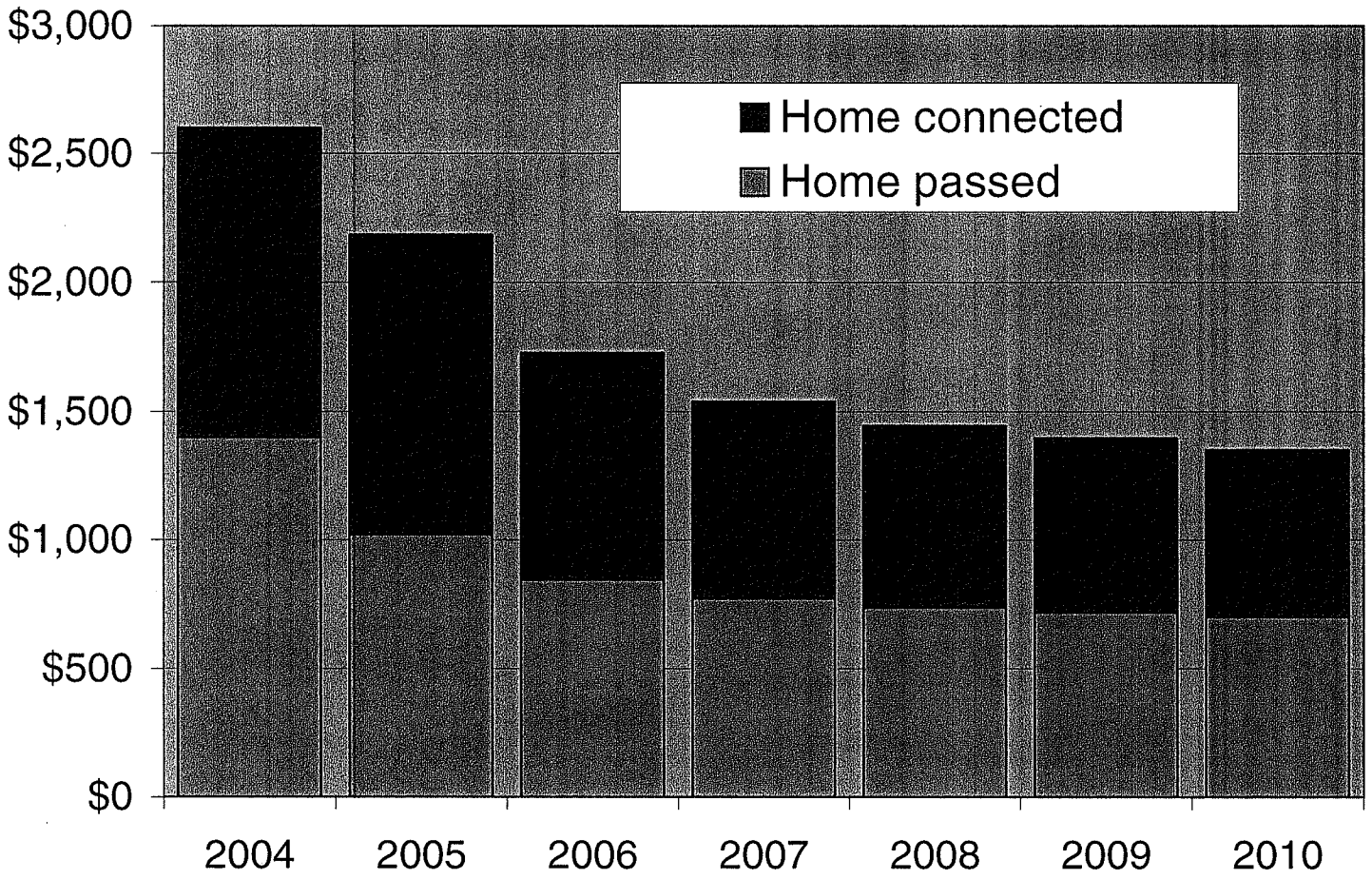
RVALLC 2009

Non-FTTH Broadband Users Who Would Take FTTH Service (If Available)



RVALLC 2009

Estimated FTTH costs
Home passed and home connected



Source: Corning Analysis

FTTH Case Study Demographics

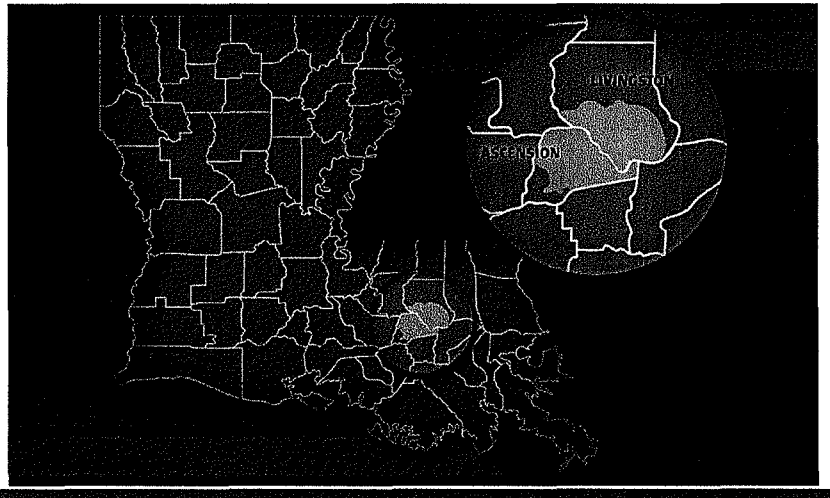
	Households	Density	Median Income	Percent Minority Households
USA	114,694,201	50.0	$50,170	23%
EATEL (Total)	31,434	27.2	$59,633	17%
Federated Telephone Coop (Total)	9,775	4.9	$45,735	3%
Jaguar (Blooming Prairie area)	7,117	5.1	$54,258	2%

Source: CLARITAS **provided data at the census tract level**

EATEL – Background Information

EATEL

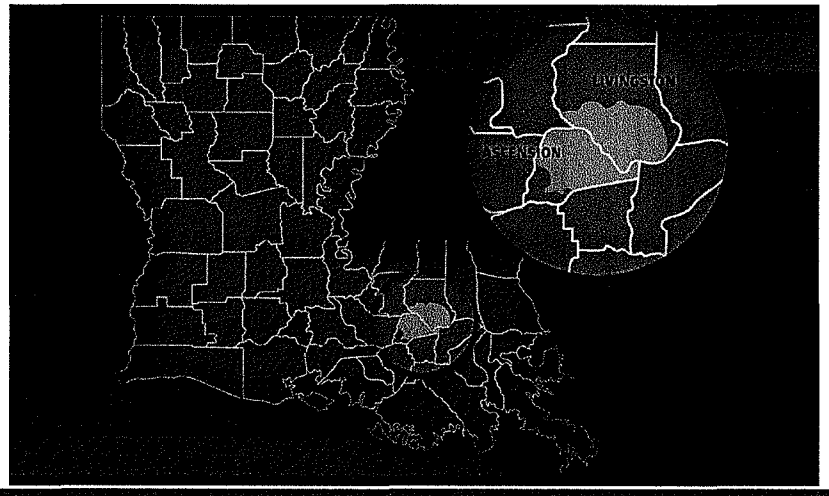
- Privately held Rural Independent Telephone Company
- Founded In 1935
- ~ 35,000 telephone access lines
- Coverage area includes:
  - *Most of Ascension Parish*
  - *Southern half of Livingston Parish*
  - *Overall ~ 458 square miles located on I-10 between Baton Rouge and New Orleans*



EATEL FTTH Deployment

EATEL

- Began deployment in June 2004
- ~ 37,000 homes passed by EOY 2008
- ~ 20,000 homes served
- 100% of Ascension Parish customers have access to broadband services
  - *90% via fiber*
  - *10% via DSL*



EATEL Services Offered

EATEL

- Local and Long Distance Voice
  - *Enhanced caller ID on TV*
- High Speed Internet
  - *30 Mbps (down) x 15 Mbps (up)*
- Video
  - *45 HD channels*
  - *300+ SD and Music Channels*
  - *DVR, VOD, PPV, TV Caller ID*

Federated Telephone Overview

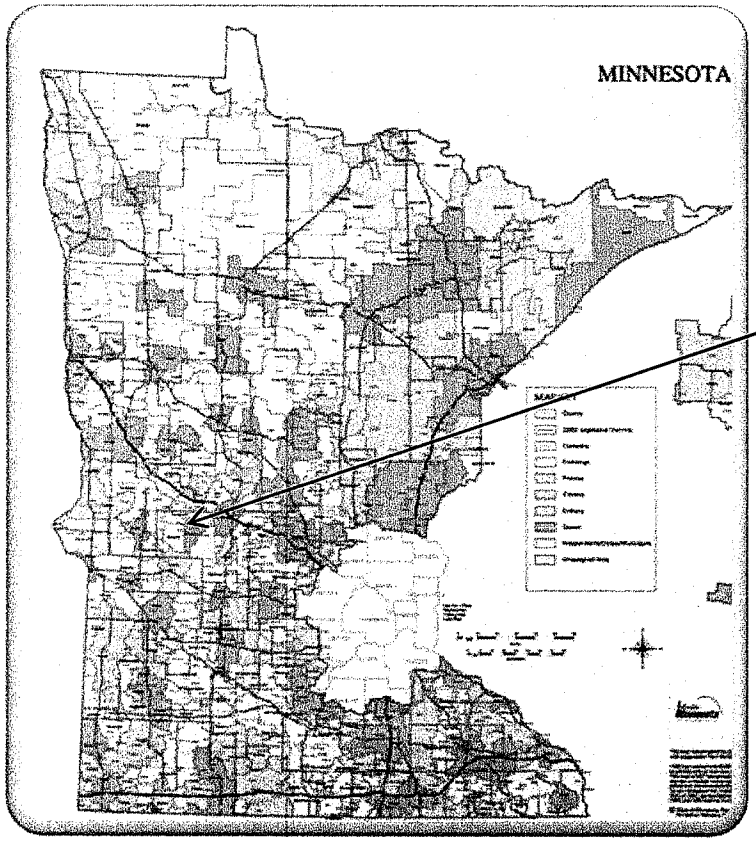
Federated TELEPHONE

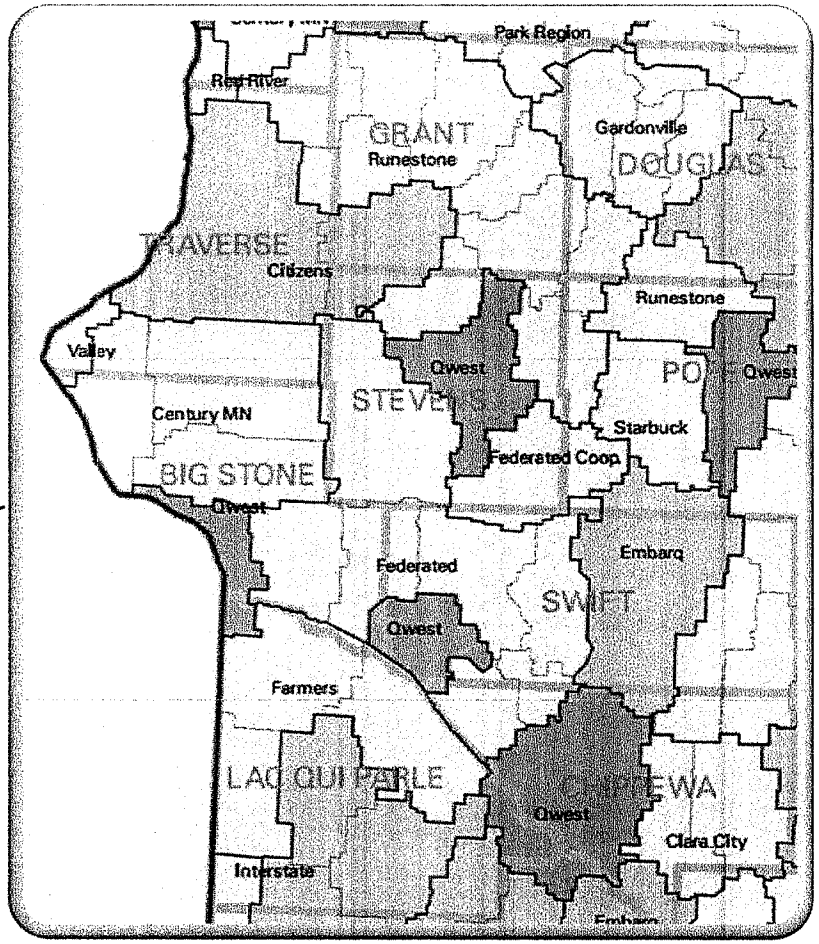
- Headquarters: Chokio, Minnesota
- Serving area: 8 exchanges - covering 858 square miles
- ILEC & CLEC access lines: 3928
- Density/mile: 3.18
- Workforce: 17 employees and 7 Board of Directors
- Services: Local, long distance, CATV & Internet service provider

Federated Telephone – Background

Federated TELEPHONE

Future. Communications. Today.





Initial Decision to Deploy FTTH

Federated TELEPHONE

- Replace deteriorating outside plant facilities
- Provide additional service offerings to meet customers' needs and to increase revenue streams
- Create new revenue streams
- Received RUS approval for a field trial in 1997
- Offer CATV in communities that have none

Federated Penetration Rates

- Federated has deployed FTTP to:
  - *100% of its members*
  - *99% to its CLEC areas*
- Federated has deployed about 3,350 units
- ILEC deployment statistics (penetration)
  - *64% Internet*
  - *100% Phone*
  - *38% CATV*
- ILEC deployment statistics (penetration)
  - *76% Internet*
  - *90% Phone*
  - *58% CATV*

Jaguar Communications – Background

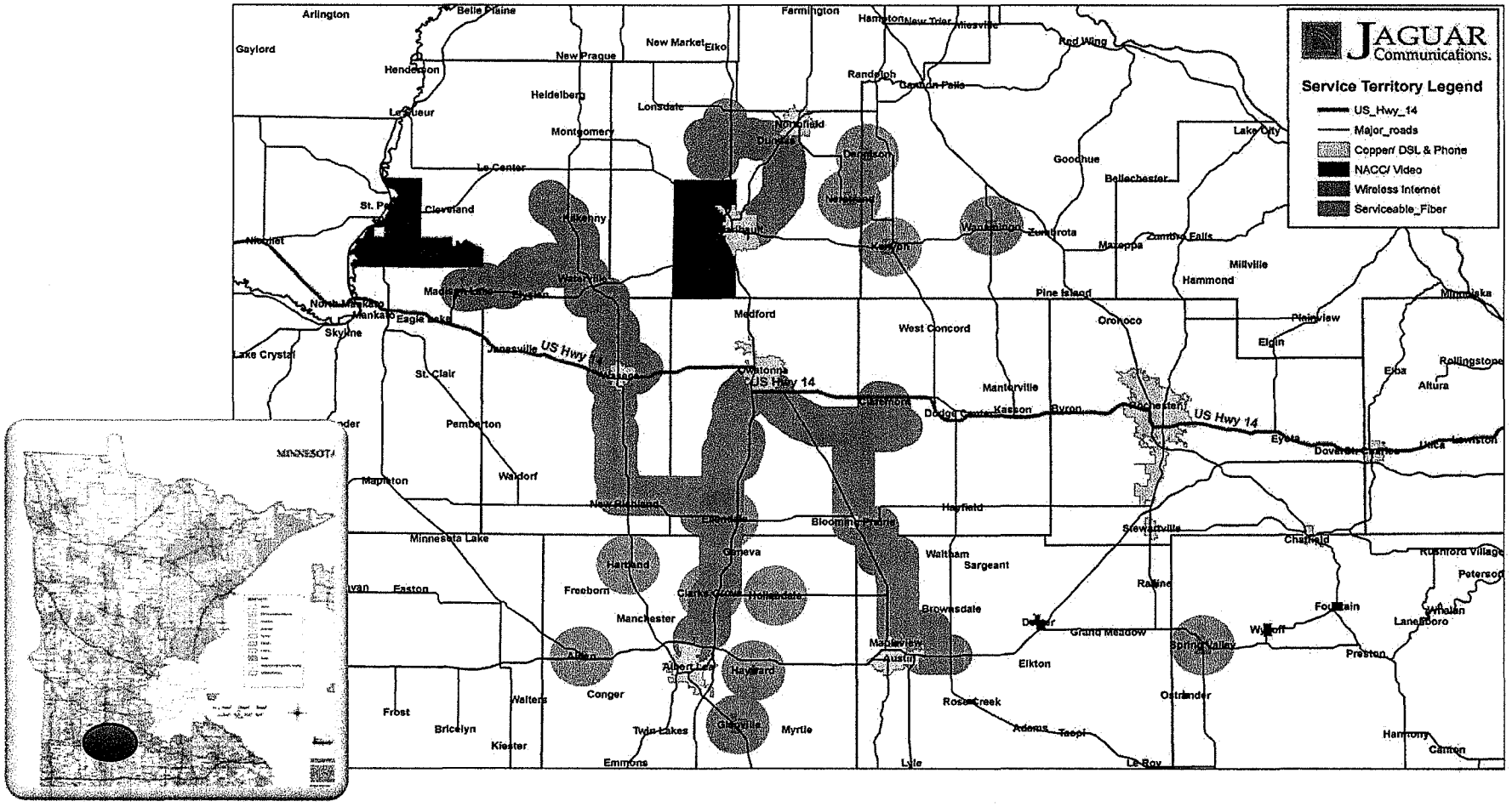
- Jaguar Communications
  - *CLEC*
  - *ISP*
  - *MSO*
  - *Home Communications Provider*
- A group of local people, friends, and family members
  - *Owners are "ordinary people" – Farmers, Mechanics, Ranchers, Electricians, Plumbers, Real Estate Agents, and Teachers*
  - *In fact 71 of the most "extra-ordinary people" you would ever meet*
- Bring the "Good Stuff" to our area
- The "New IOC" of the 21st Century

- Began as an ISP in 1994
- 10,000 Dial Up Customers
- Sold in 1999
- Jaguar Communications incorporated in 1999
- Regulatory and interconnection complete in 2001
  - First Customer 2002
  - 1000th Customer 2004
  - 2000th Customer 2005
  - 10,000th Customer 2008
- Services offered
  - Typical residential packages - Voice, data (3-20Mbps), video (80-200 channels)

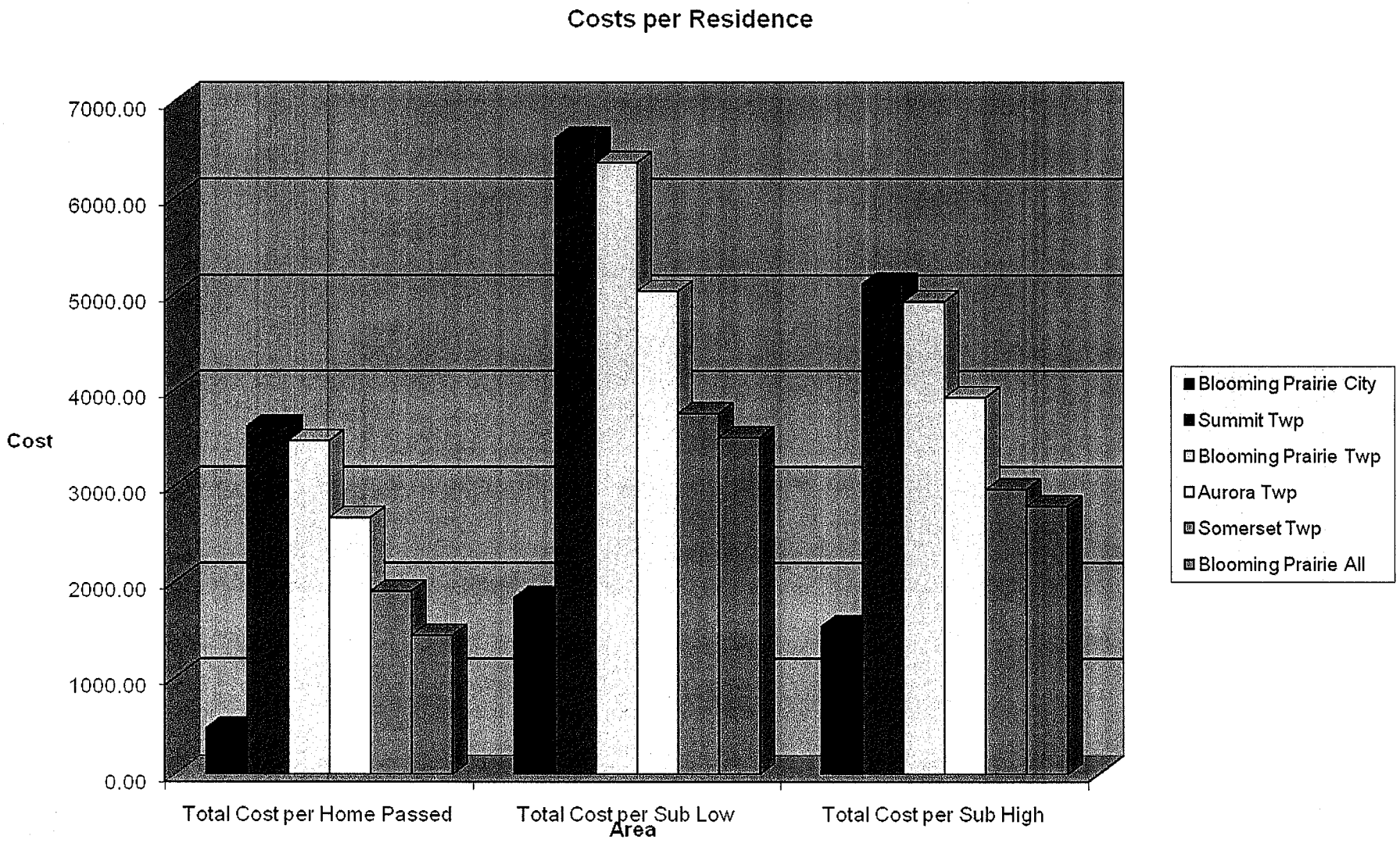
Why Did We Do It?

- To Bridge the Digital Divide
- To Provide First Class Services to our Local Areas
- To Connect our Rural School Systems to the Internet
- To Provide the BEST Possible Opportunities to our Children
- To Invigorate our Local Towns and Economies
- To Make a Fair Return for our Shareholders
- To PROVE that it can be Done

- Jaguar Communications service territory

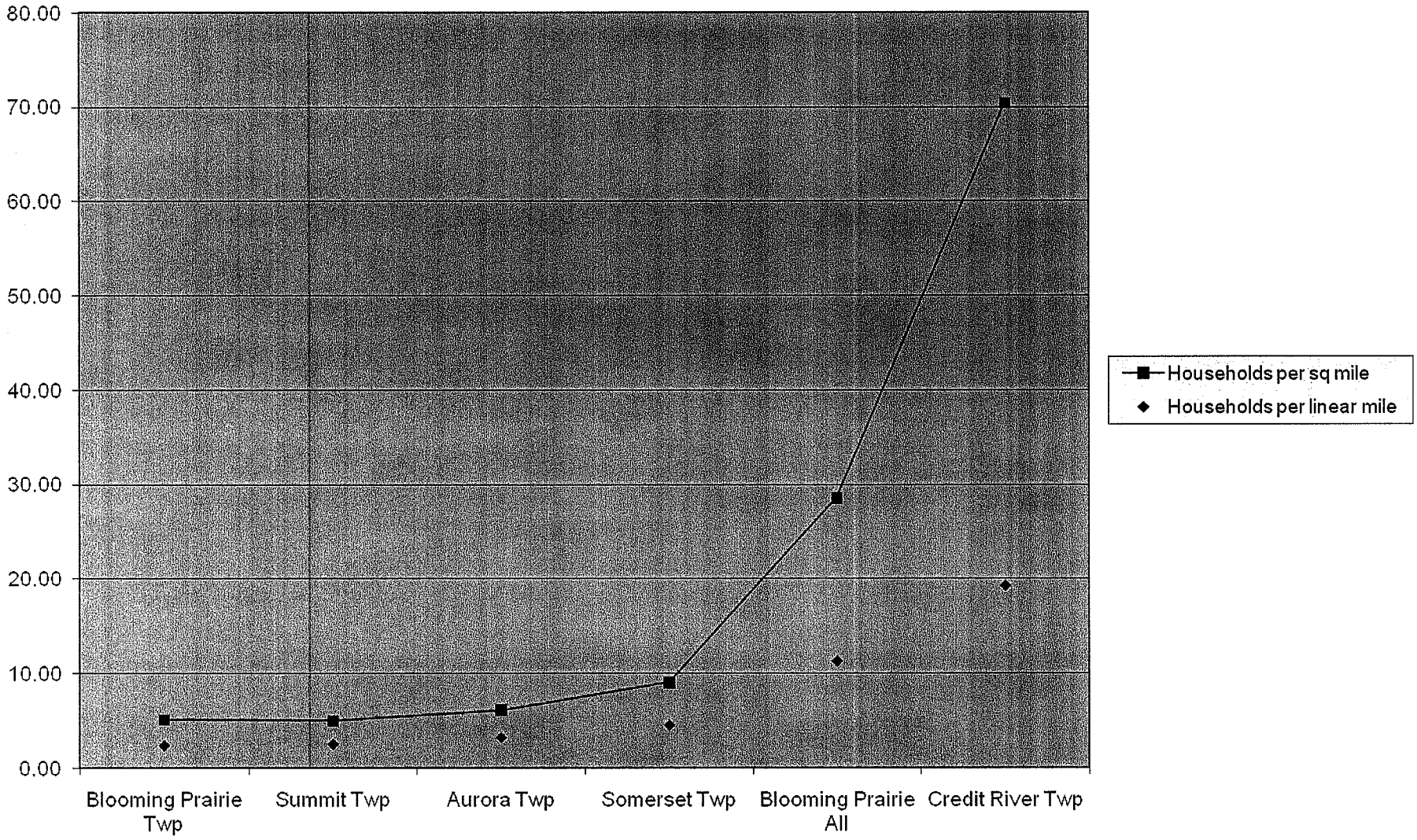


FTTP Cost of Deployment

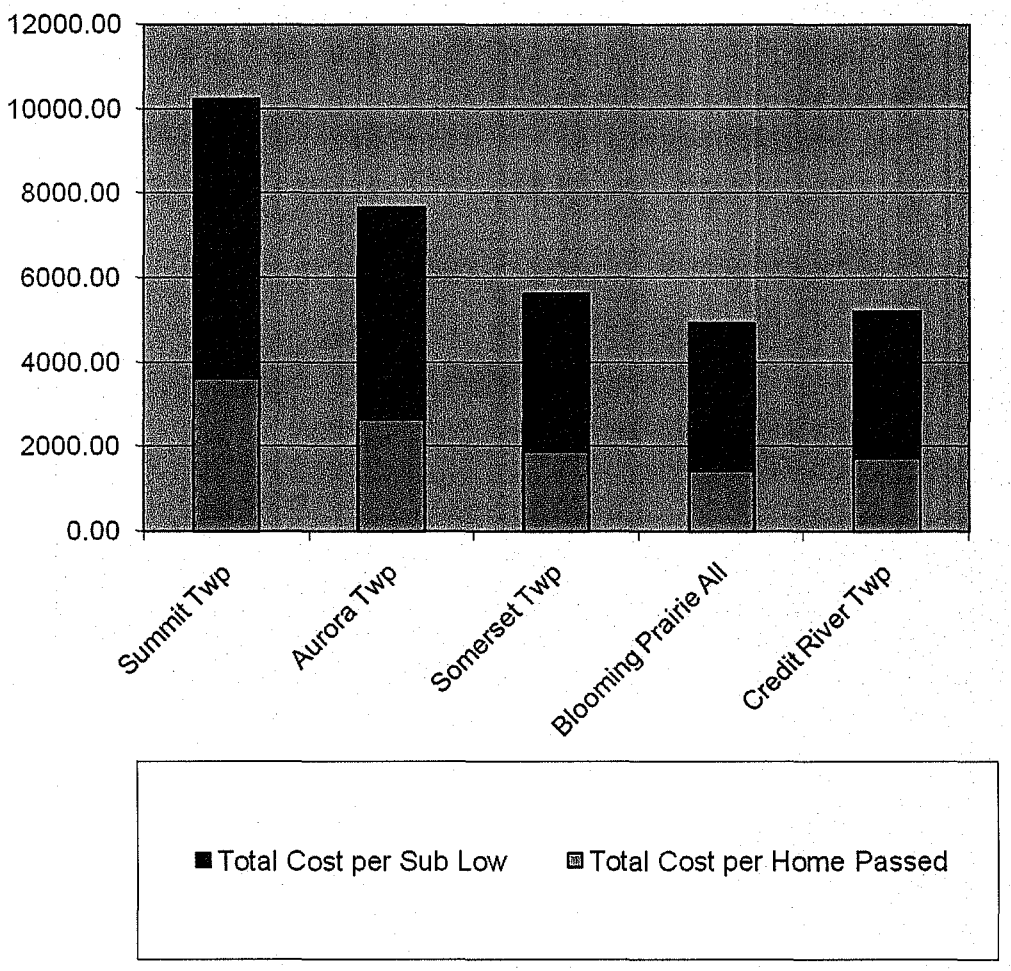


Jaguar Density Comparison

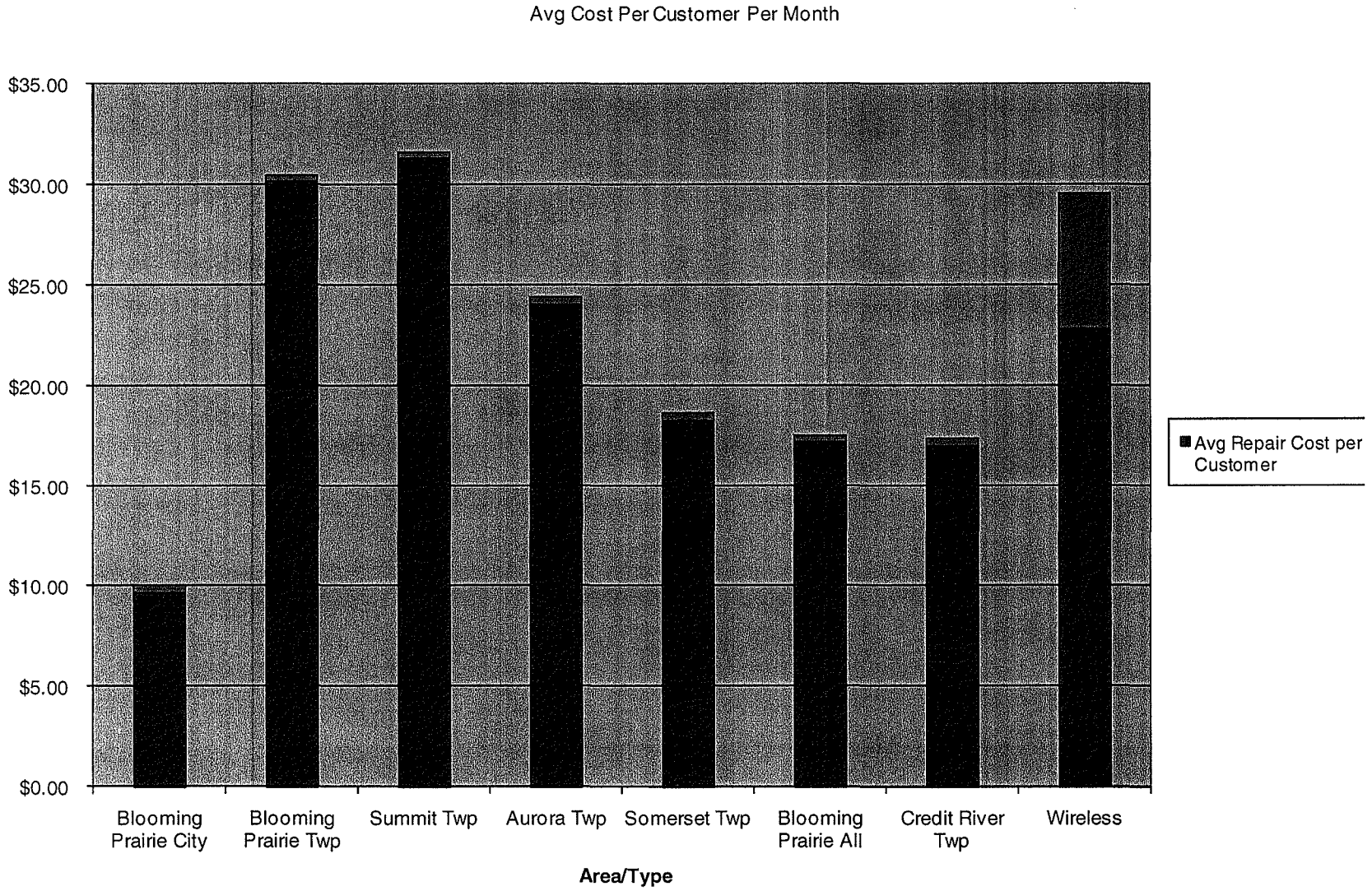
Density Comparison - Sqare Mile vs Linear Mile



Jaguar Average Costs



Jaguar Average Costs



Jaguar Observations

Fiber can be cost effective

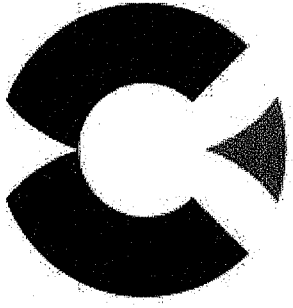
- Access infrastructure a **GENERATIONAL** investment with long lifecycle – look to the future
  - *Incremental improvements inefficient, miss the mark*

Fiber compares favorably to other technologies

- Total cost of ownership exceptionally advantaged
- Wireless is surprisingly costly

Fiber provides incomparable scalability

- Immense service headroom
- Can be cost effective in low and high density



Calix

ACCESS INNOVATION